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- (71) Applicant (for all designated States except US): **GENO-LIFE** [FR/FR]; Biopole Clermont Limagne, Saint Beuzire, F-63360 Gerzat (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **CHAUBRON, Franck** [FR/FR]; 6, Allée de la Fontoune, F-63400 Chamalières (FR). **MARTIN-MINVIELLE, Anne, Céline** [FR/FR]; 61, rue des Gravouses, F-63400 Chamalières (FR). **GROULON, Sophie** [FR/FR]; 1, Impasse Edouard Branly, F-63800 Cournon D'Auvergne (FR).
- (74) Agents: **MARTIN, Jean-Jacques** et al.; Cabinet Regimbeau, 20, rue de Chazelles, F-75847 Paris Cedex 17 (FR).
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(54) Title: ONE STEP REAL-TIME RT PCR KITS FOR THE UNIVERSAL DETECTION OF ORGANISMS IN INDUSTRIAL PRODUCTS

(57) Abstract: This invention is related to a novel sample preparation, probes, couple primer sets for one step real time reverse transcriptase polymerise chain reaction (RT-PCR), methods and kits for the universal detection of alive bacteria and/or fungus-yeast in pharmaceutical, cosmetic and non clinical samples.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 03/05312

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, Sequence Search

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ROKBI B ET AL: "Assessment of Helicobacter pylori gene expression within mouse and human gastric mucosae by real-time reverse transcriptase PCR." INFECTION AND IMMUNITY. UNITED STATES AUG 2001, vol. 69, no. 8, August 2001 (2001-08), pages 4759-4766, XP002276770 ISSN: 0019-9567 figures 2A,,3	1-3,8-10
X	WO 02/070728 A (KELEN GABOR DAVID ; YANG SAMUEL (US); LIN SHIN (US); ROTHMAN RICHAR) 12 September 2002 (2002-09-12) P890F, P1033R, uniprobeclaims 1-46; figures 1-5; example 1; table 1 ----- -/--	1-3,8-10

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
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- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

13 April 2004

Date of mailing of the international search report

28. 06. 2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3018

Authorized officer

van Klompenburg, W

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 03/05312

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	MYERS T W ET AL: "REVERSE TRANSCRIPTION AND DNA AMPLIFICATION BY A THERMUS THERMOPHILUS DNA POLYMERASE" BIOCHEMISTRY, AMERICAN CHEMICAL SOCIETY. EASTON, PA, US, vol. 30, no. 31, 6 August 1991 (1991-08-06), pages 7661-7666, XP000371640 ISSN: 0006-2960 the whole document	1-3,8-10
A	----- US 2002/151700 A1 (RIEPING MECHTHILD ET AL) 17 October 2002 (2002-10-17) paragraph [0019]; claim 10 -----	1-3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 03/05312

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

3 (completely); 1, 2, 8-10 (partially)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1: Claim 3 completely, claims 1,2,8-10 partially

Method and kit for determining the presence of bacterial RNA in a sample, said method comprising extracting RNA, incubating the RNA with an enzyme with RT and DNA dependent -polymerase activity and with a composition for detecting bacteria comprising polynucleotide primers and probes consisting of the sequences of SEQ ID NO:1,2,11. Said method and kit where the primers and probes are natural nucleic acid or PNA. Said method for quantitative RNA analysis in comparison with quantified external standard RNA.

Invention 2: Claim 4 completely, claims 1,2,8-10 partially

As invention 1, but characterized by SEQ ID NOs: 3,4,12

Invention 3: Claim 5 completely, claims 1,2,8-10 partially

As invention 1, but characterized by SEQ ID NOs: 5,6,13-16

Invention 4: Claim 6 completely, claims 1,2,8-10 partially

As invention 1, but for detecting fungus-yeast and characterized by SEQ ID NOs: 7,8,17

Invention 5: Claim 7 completely, claims 1,2,8-10 partially

As invention 1, but for detecting fungus-yeast and characterized by SEQ ID NOs: 9,10,18,19

INTERNATIONAL SEARCH REPORT

International Application N
PCT/IB 03/05312

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 02070728	A	12-09-2002	WO 02070728 A2 US 2003124545 A1	12-09-2002 03-07-2003
US 2002151700	A1	17-10-2002	EP 1174520 A2	23-01-2002